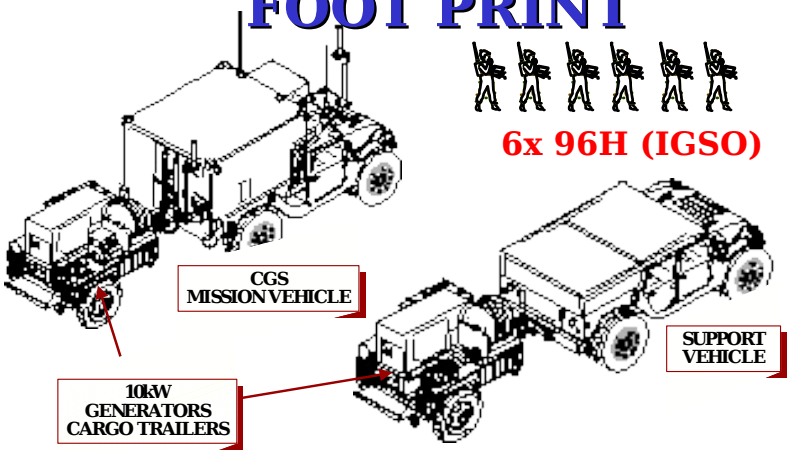
U.S. ARMY
COMMON GROUND STATION
JOINT SERVICES WORK STATIO
& JOINT STARS PROGRAM

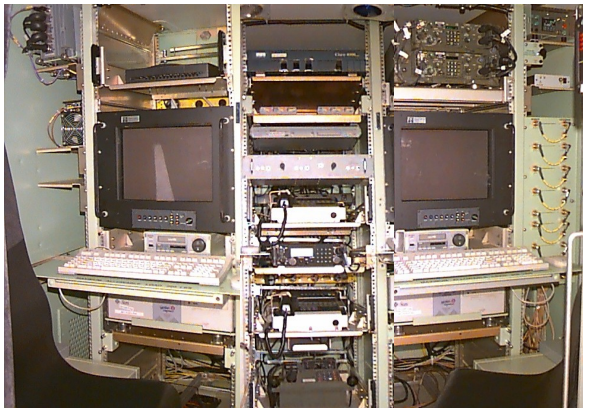
COL STEVE BOND
TRADOC SYSTEM MANAGER JOINT STARS
(520) 533-3605
steve.bond@hua.army.mil

CGS SYSTEM
AN/TSQ-179 (V) 1&2

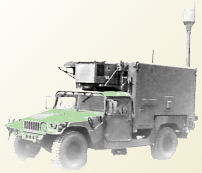
FOOT PRINT

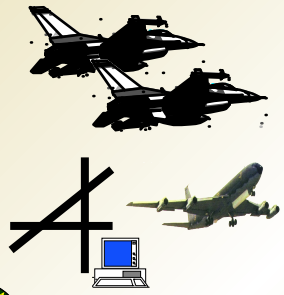


INTERNAL



OPERATIONAL CONCEPT
EMPLOYMENT





XXX

ARTY BDE

CORPS AVN

EAC

CORPS TAC (FWD)

CORPS MAIN
ACE/FSE

ARTY BDE

XXX

XX

DIV AVN

DIV TAC (FWD)

DIV MAIN

BDE

BDE

BDE

XX

DIV AVN

DIV TAC (FWD)

DIV MAIN

BDE

BDE

BDE

XX

DIV AVN

DIV TAC (FWD)

DIV MAIN

BDE

BDE

BDE

XX

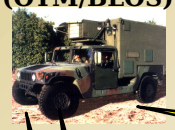
ACR

OPERATIONAL CAPABILITIES
CURRENT & FUTURE

CURRENT

FUTURE

CGS (OTM/BLOS)



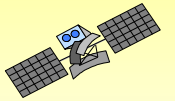
E8C

E8D (RTIP)

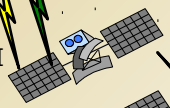
U2

ACS

SIGINT/MASINT COLLECTORS



UHF SATCOM



IDM

IBS

TIBS

TDDS

TOPS

ARL

TRIX

GRCS

IRF

AFATDS/FDS

AP-LH

KIOWA-W

COMANCHE

A2C2S

TUAV

PREDATOR

PREDATOR GROUND

HUNTER

JSWS

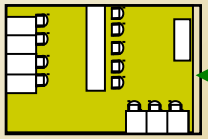
CGS

RWS

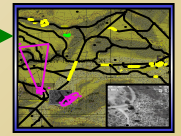
RWS

TOC LAN

TOC



BATTLEFIELD VISUALIZATION MONITOR



MSE (WIN-T)

ASAS

S BAND

UAV GCS (TCS)

IAS (USMC)

TROJAN (WIN-T)

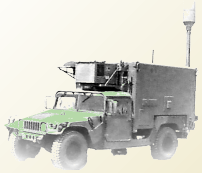
MITT/FAST (TES)

SIMULATIONS

SECONDARY IMAGERY SYSTEMS ON LAN (N

- Modernized Imagery Exploitation System (MIES)
- Tactical Exploitation Group (TEG) *USMC*
- Contingency Airborne Reconnaissance System (C
- Distributed Common Ground Station (DCGS)
- Enhanced Tactical Radar Correlator (ETRAC)
- Joint Service Imagery Processing Systems (JSIPS)
- Joint Deployable Intelligence Support Systems (J
- Other Common Imagery Ground/Surface Systems
- Defense Intelligence Agency (DIA)
- National Ground Intelligence Center (NGIC)
- National Photo Interpretation Center (NPIC)
- National Imagery Mapping Agency (NIMA)

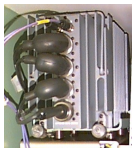
CGS (V)2 SYSTEM
INTERFACE/COMMUNICATIONS



SINCGARS (Voice)
AN/VRC-92A
30-88 MHz
TX/RX

GPS PLGR
AN/PSN-11
1575 MHz
RX Only

SINCGARS (TACFIRE-AFATDS-II
AN/VRC92F (A-SIP)
30-88 MHz
TX/RX



JSTARS SCDL/GDT
Ku-band
TX/RX

UHF SATCOM
AN/PSC-5 and AN/USC-55
290-310 MHz / 225-400MHz
RX Only

JTT/CTT (LOS)
AN/USC-55
225-400MHz
RX Only

Voice UHF
AN/VRC-83
225-400 MHz
VRC-83 TX/RX

CTT/JTT (SATCOM)
AN/USC-55
243-400MHz
TX/RX

UHF SATCOM
AN/PRC-5
(EMUT/SPITFIRE)
290-310 MHz
RX/TX

FAX

KY-68

STU III

OTHER CONNECTIVITY

MSE (KY-68)
TROJAN
ASAS
UAV
STU III
FAX
TACFIRE/AFATDS

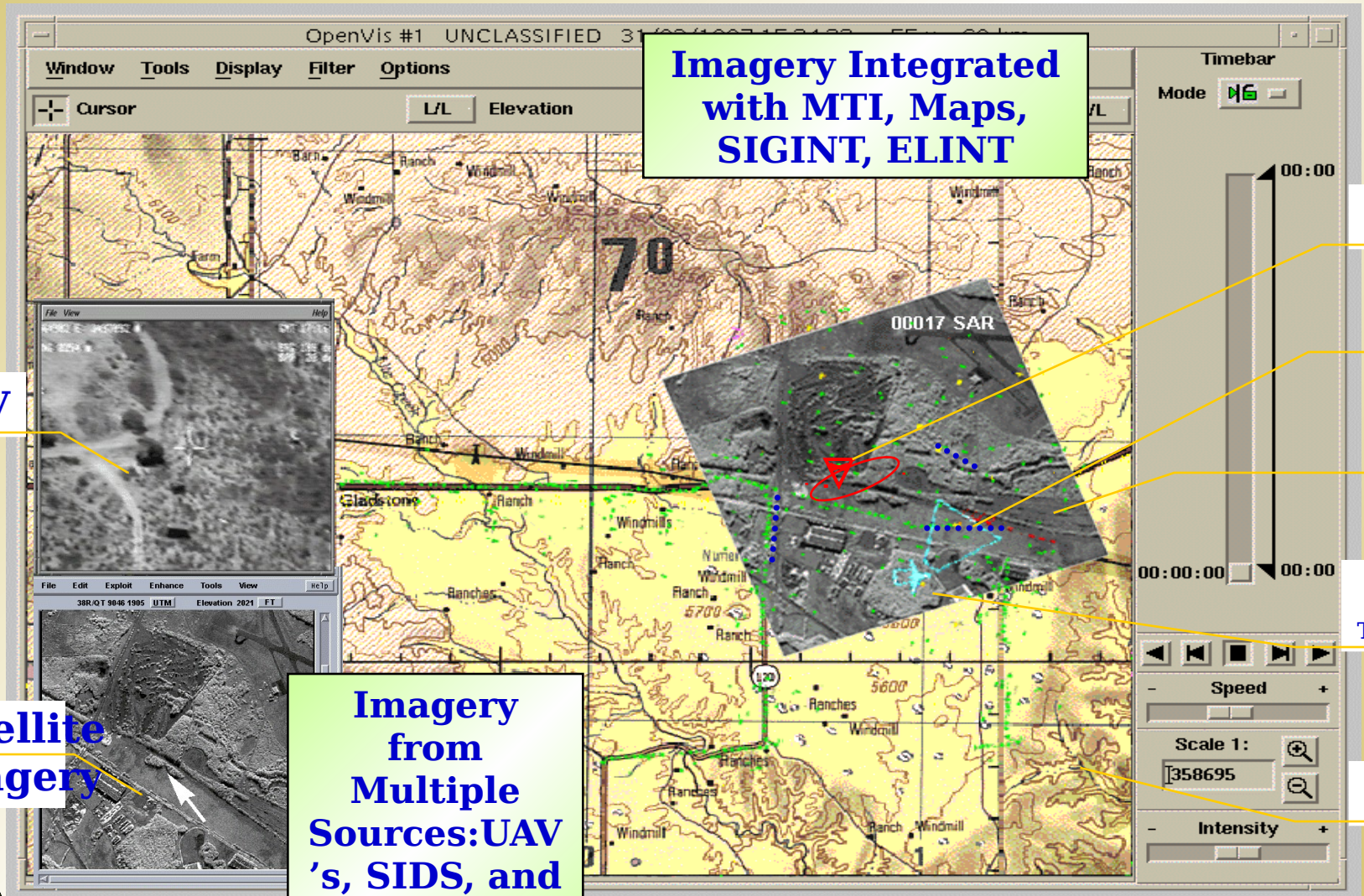
CGS-RWS

IN CAB
OTM REMOTE

REMOTE WORK STATION
(Sun Sparc RDS Powerlite)
CONNECTIVITY
ASAS
SIPR Net
OTHER

JOINT STARS TSM/PM SUPPORTING THE WARFIGHTER

OPERATIONAL CAPABILITIES
COMMANDERS VIEW



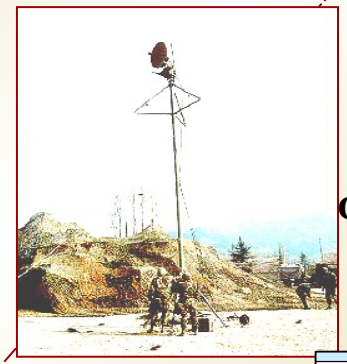
JOI M/PM SUPPORTING THE WARFIGHTER

OPERATIONAL CAPABILITIES
CORRELATION

INTERDEPENDENCIES
INTERNAL TOC OPERATIONS

"The bottom line is that the intelligence gleaned from JSTARS via CGS provided outstanding situational awareness to maneuver commanders and effectively cued other live sensors, including the Hunter Unmanned Aerial Vehicle (UAV) deployed by the 504th MI Bde."

BG Richard A. Cody
Assistant Division Commander
4th Infantry Division



4TH ID BDE TOC

UAV
GCS
CGS
ASAS
ACT
ASAS
CGS
UAV
BUBBA VISION
CGS/ UAV
ASAS
MAP
ENG
ADA
S-3
FSO / AIR

4TH ID DIV FWD

GCS
CGS
JSTARS/ UAV
MCS/APLIQUE AIR/GRND
OPS ADC INT ENG
ASAS ASAS RVT CGS
ACE FWD
ASAS
MAP
CBT SUPPORT
ENG/ADA/FSO
TROJAN
ASAS

JOINT STARS TSM/PM SUPPORTING THE WARFIGHTER

CGS SUPPORT TO TARGETING

- **CGS LOCATED WITH MI UNITS (EAC/CORPS/DIV/BDE)**

  CLASSIC "MI" SUPPORT TO TARGETING. CGS SUPPORTS TARGET DEVELOPMENT REPORTING TO MI ENCLAVES (ASAS/ACE-DISE). ASAS PASSES TARGET INFORMATION TO DOCC OR FSE.

  **** MI DOCTRINE: FM 34-1-1/ ST 2-50***
  FM 34-25-1, FM 34-25-3*
  **** ALSA PUB: FM 2-00.1***

- **CGS LOCATED WITH HHB CORPS ARTILLERY (CORPS)**

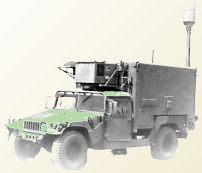
  TARGET NOMINATION AT DOCC OR CORPS FSE. (BASED TARGETING CRITERIA ESTABLISHED) **** ARTILLERY DOCTRINE: F***
  ST 6-60-30, FM 6-20-2
  **** ALSA PUB: FM 2-00.1***

- **CGS LOCATED WITH ARTILLERY BDE'S (CORPS)**

  DIRECT TARGETING WITH ARTILLERY BDE **** ARTILLERY DOCT***

  - **DECENTRALIZED FIRES**
  - **PREPLANNED FIRE MISSIONS**
  - **TARGET HAND-OFFS FROM DOCC/FSE**
  - **TARGETS OF OPPORTUNITY**

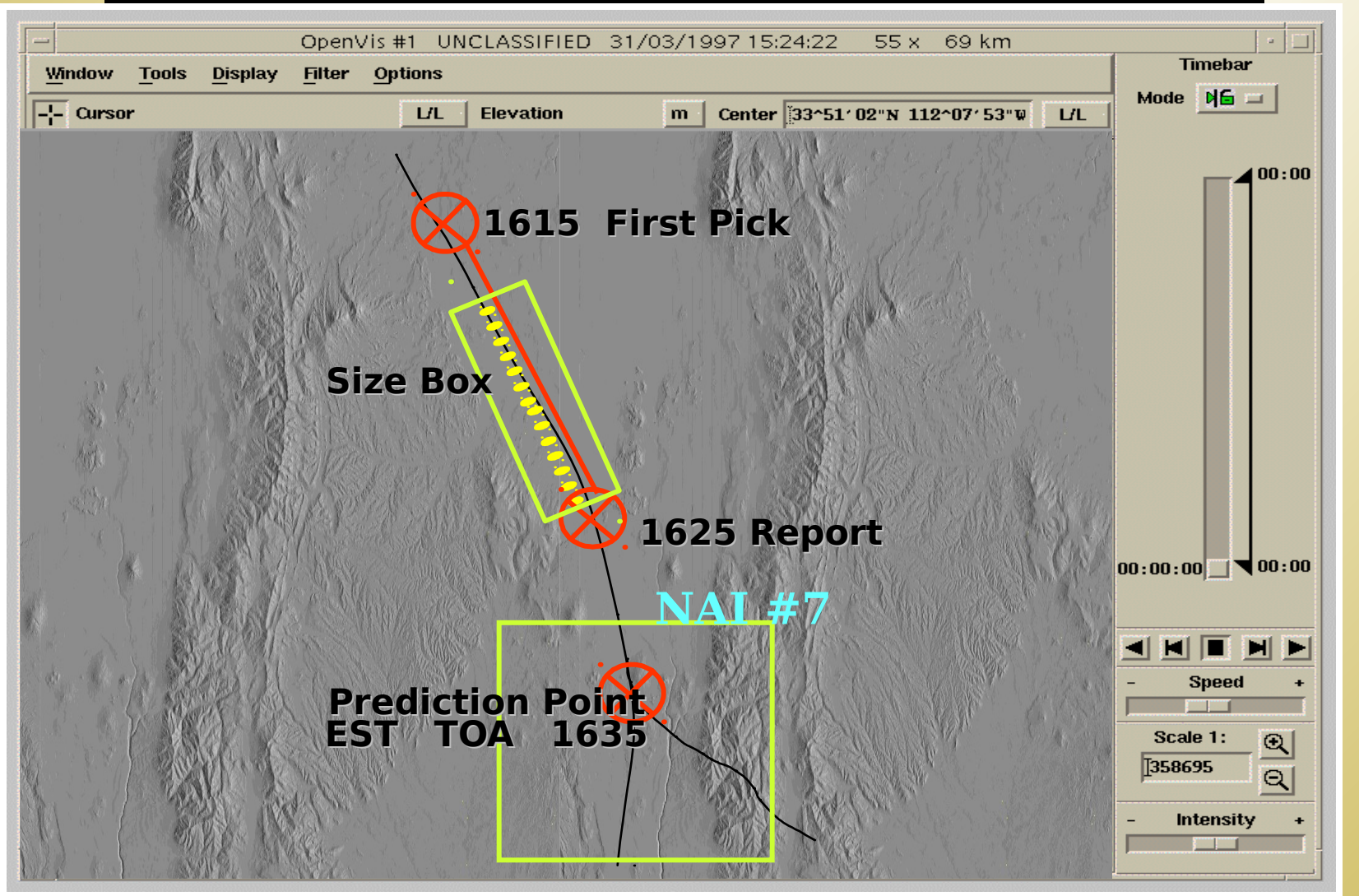
FA FIELDING



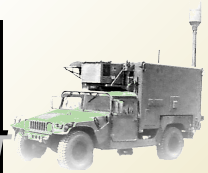
JUN 00	18TH FA BDE	18TH ABC	FORT BRAGG	
JUN 00	HHB 18TH FA	18TH ABC	FORT BRAGG	
JAN 02	HHB FA	III CORPS	FORT SILL	
JAN 02	17 FA BDE	III CORPS	FORT SILL	
JAN 02	75 FA BDE	III CORPS	FORT SILL	
JAN 02	212 FA BDE	III CORPS	FORT SILL	
JAN 02	214 FA BDE	III CORPS	FORT SILL	
OCT 02	HHB FA	V CORPS	GERMANY	
OCT 02	41ST FA BDE	V CORPS	GERMANY	
FEB 03	45 FA BDE	NG	ENID, OK	
APR 03	197 FA BDE	NG	MANCHESTER, NH	W
APR 03	138 FA BDE	NG	LEXINGTON, KY	W
MAY 03	142 FA BDE	NG	FAYETTEVILLE, AR	WP2R
MAY 03	147 FA BDE	NG	SIOUX FALLS, SD	WP2T
JUN 03	169 FA BDE	NG	AURORA, CO	
JUN 03	196 FA BDE	NG	CHATTANOOGA, TN	W

FIELDED TO 525 MI BDE, 18 ABN C[illegible]HS

BASIC TARGETING



CGS/AFATDS/ATACMS EVENT BASED FIRE MISSION



45 TO 50 MINUTE EVENT TIME LINE

START TGT FILE | **INITIAL ATI:CDR** | **ATI:CDR EVERY 3 MIN** | **ATI:CDR EVERY MIN** | **TRIGGER EVENT** | **IMPACT AREA**

(2.5K)

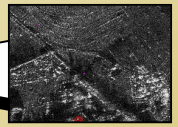
NAI

DTE

TAI

ETE

PTL



Tgt Track
- Tgt Classified (Identified)
- Tgt Tracks Established
- Tracks on Center Mass

Decision Trigger Event (DTE)
- TGT Verification
- Reported To AFATDS By CGS
- Launcher Moves from HA To FP

Predicted Target Location (PTL)
- Planned Coordinates In Fire Plan
- Place BATs Over Center Of Mass C
- CGS request Pre/Post SAR (BDA/T

Engagement Trigger Event (ETE)
- Reported To AFATDS By CGS
- Initiates Tgt Engagement

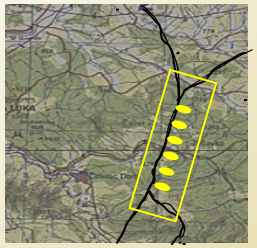
QUEUED TARGETING

- LAUNCH/FIRING DETECTION
- PLAIN TEXT MSG TO CGS WITH TIME/LOCATION
- CGS LOCATES
- STARTS TRACK
- REPORTS DISPOSITION
- PROVIDES THE ENEMY MULTIPLE WAYS TO DIE!

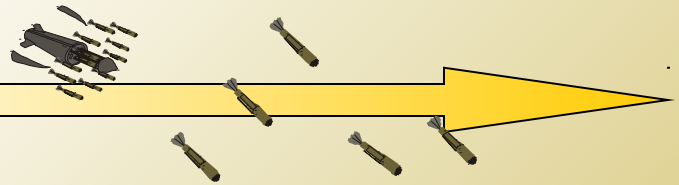
DETECT

LOCATE

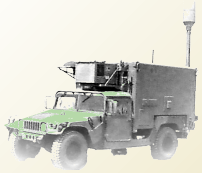
TRACK/TARGET



REPORT



OPERATIONAL CONCEPT
DEEP STRIKE



SIGINT

UAV

JOINT STARS

APACHE LB

CORPS/EAC
DOCC

ARTILLERY
BRIGADE

AVIATION
TOC

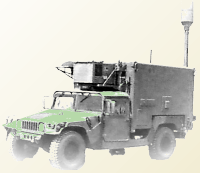
DECIDE
- CGS supports mission plan
  through Battlefield visuali
- System set to monitor NAI/

DETECT
- Multi ISR sensor input
- NRT visualization
- Monitor NAI/TAI (Track/Rp
- Cross Cue ISR sensors

DELIVER
- Provides TGT data to DOCC
  AFATDS/AVTOC
- Monitors on-going operatio

ASSESS
- Use ISR data for BDA/TDA
- Provide information to CM

QUICKFIRE "SENSOR TO SHOOTER"



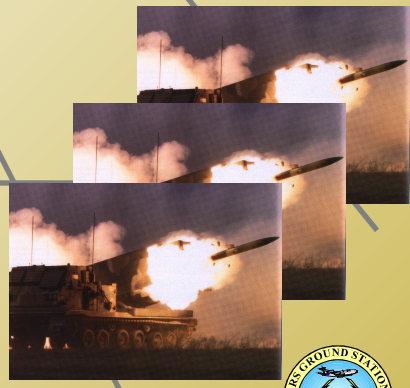
E-8C
CONDUCTS SURVEILLANCE OF CORPS AREA OF INTEREST

CGS WITH ARTY BDE/MLRS BN
- COLLECTS, INTERPRETS DATA
- SENDS OUT REPORT BASED ON MISSION TASKING FOR DIRECT FIRE

FSE:
- MONITORS TRAFFIC

TARGET PRIORITIES

MLRS



CORPS MLRS BN FDC

MLRS BTRY FDC

CGS - ARTILLERY MESSAGES

Operator Selectable Message Set

JVMF

1. Free Text (K01.1)
2. Check Fire (K02.1)
3. Call For Fire (K2.4)
4. Observer Mission Update (K02.6)
5. Target Data (K02.9)
6. On-Call Fire Command (K02.12)
7. Message to Observer (K02.14)
8. Fire Support Coordination (K02.15)
9. End of Mission and Surveillance (K
10. Commander Target Acquisition (K

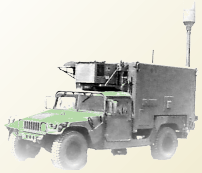
TACFIRE

1. ATI:CDR (2000)
2. ATI:TCRIT (2019)
3. FM:CFF (3056)
4. SPRT:DATUM (6001)
5. SYS:PTM (8)

JOINT DISTRIBUTIVE VIRTUAL COMBAT RANGE

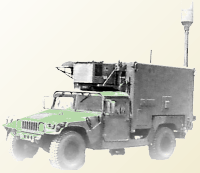
MAJ Tim Chyma
PM CGS
DSN 987-4278
timothy.chyma@iews.monmouth.army.mil

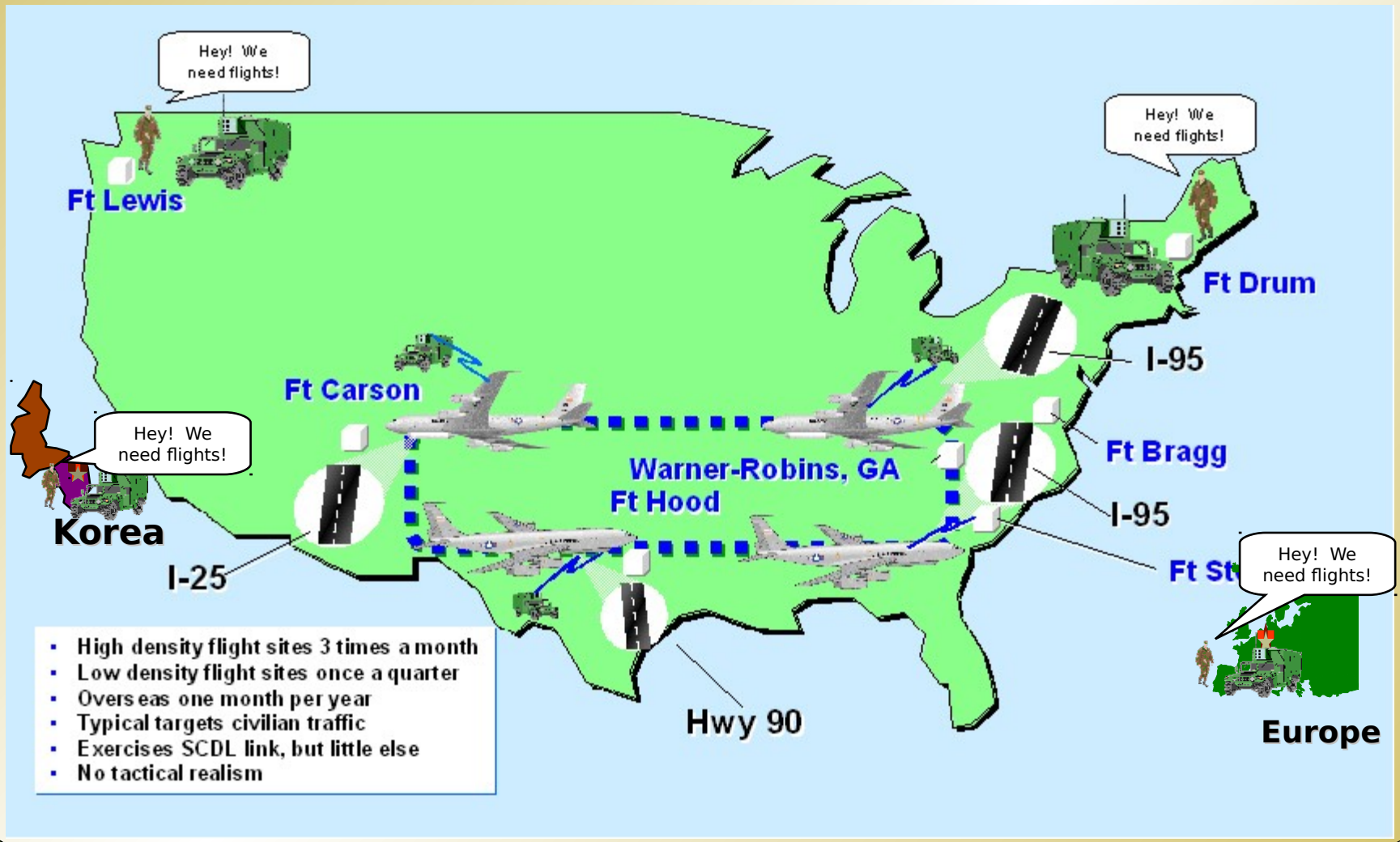
WHY WE NEED A VIRTUAL COMBAT RANGE?



- NETWORK CENTRIC WARFARE (NCW) IS COMPLICATED
- JOINT SYNERGY MANDATORY FOR SUCCESS
- OPPORTUNITIES TO TRAIN TOGETHER ARE RARE AND EXPENSIVE
- TRAINING RANGES TOO SMALL TO ACCOMMODATE CAPABILITIES OF PRESENT WEAPON/SURVEILLANCE SYSTEMS
- DISCRETE OPERATIONAL TESTING OF NCW SYSTEMS RESOURCE/COST PROHIBITIVE

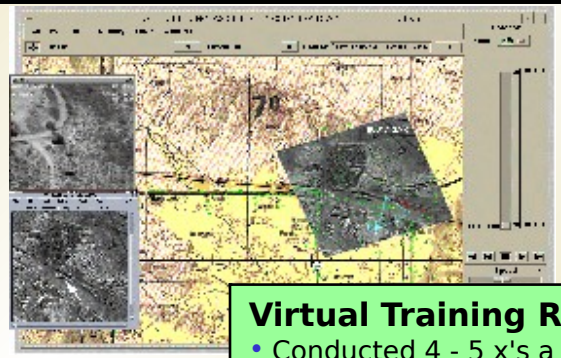
HOW WE TRAIN NOW WITH E-8C





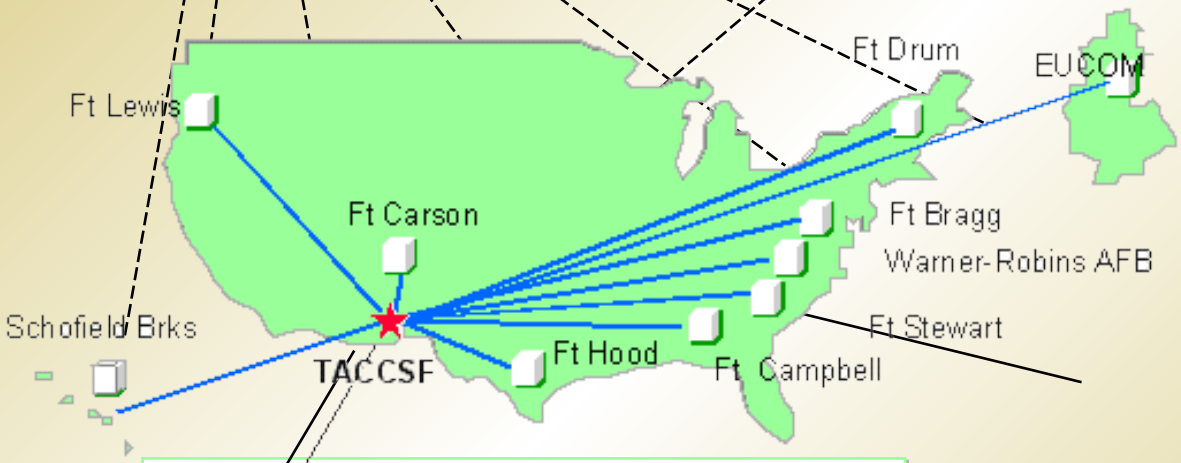
TRAINING on the VIRTUAL COMBAT RANGE

CGS Out Stations
- Provide CGS Support to Virtual Units in Battle Space or staff at distributed site
- Detect, track and digitally report on tactical play



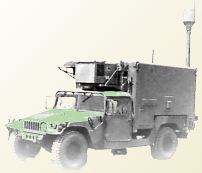
Battle Space

Virtual Training Range
- Conducted 4 - 5 x's a month (GOAL)
- Coherent Tactical Storyline
- Training Scenarios based on Out Station needs
- Multi-BOS
- Tie into existing and planned Sims (CSTARS, IEWTPT,etc)
- Quantifiable Training (Task Condition, Standards)
- Real Links (ASAS, AFATDS)
- AAR's (VTC)



TACCSF
- Creates Virtual Battle Space
- Builds Training Scenarios based on needs in the field
- Facilitates AAR's by VTC
- Manages Training Schedule
- Crews VSTARS when 93 ACW is not available

THE JOINT DISTRIBUTED COMBAT RANGE COMPONENTS



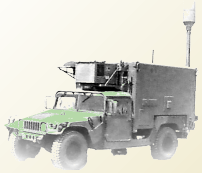
- THE JOINT HUB “TACCSF”
- THE NETWORK “GUARD NET”
- THE OUTSTATIONS “WARRIOR WORLD”

THE THEATER AEROSPACE COMMAND AND CONTROL SIMULATION FACILITY

KIRTLAND AFB, NEW MEXICO

JOINT STARS TSM/PM SUPPORTING THE WARFIGHTER

WHY THE TACCSF?

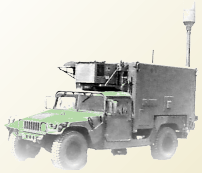


- **Cost-Effective and Available NOW!!!!**
- **Half Billion Dollar, State-of-the-Art Infrastructure**
- **A True Joint Environment**
- **TACCSF Seeking Ground Force Participation**
- **Facility Supports Joint Training, Testing and Mission Rehearsals**
- **Plenty of Room for Expansion**
- **Tailored for Joint Crew Training/Testing Issues**

TACCSF SIMULATIONS AND FEDERATES

- AWACS (Manned by 552d ACW)
- MCE (Manned by active and guard units)
- JSTARS (Manned by 93d ACW)
  - 14 VSTARS
- PATRIOT (Manned by 111th ADAB, NMANG)
- EADTB (Scud Missile Launches)
- Cobra Ball
- Rivet Joint (Offutt AFB)
- ABL
- UAV (x 3)
- AF Info Warfare Center (Red IADS)
- F-15C (x 4)
- All Air and Ground Environment Generation
- White Force Cell (Manned by 42d ACCS)
- Space Systems Simulator
- JCAT DIS Scenario Driver

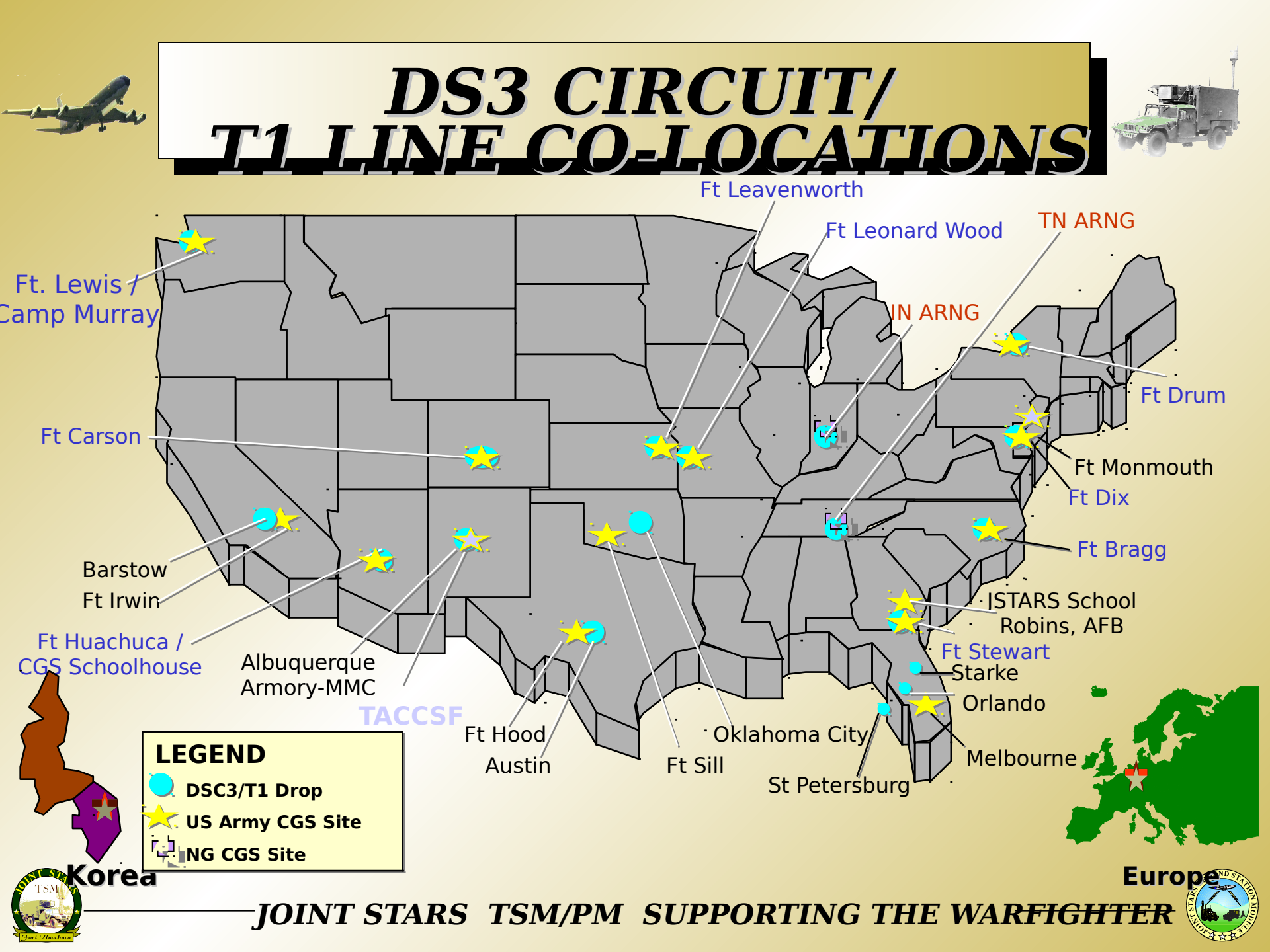
“GUARD NET”



US Army National Guard Bureau
Distributive Training Technology Project
(NGB-DTTP)

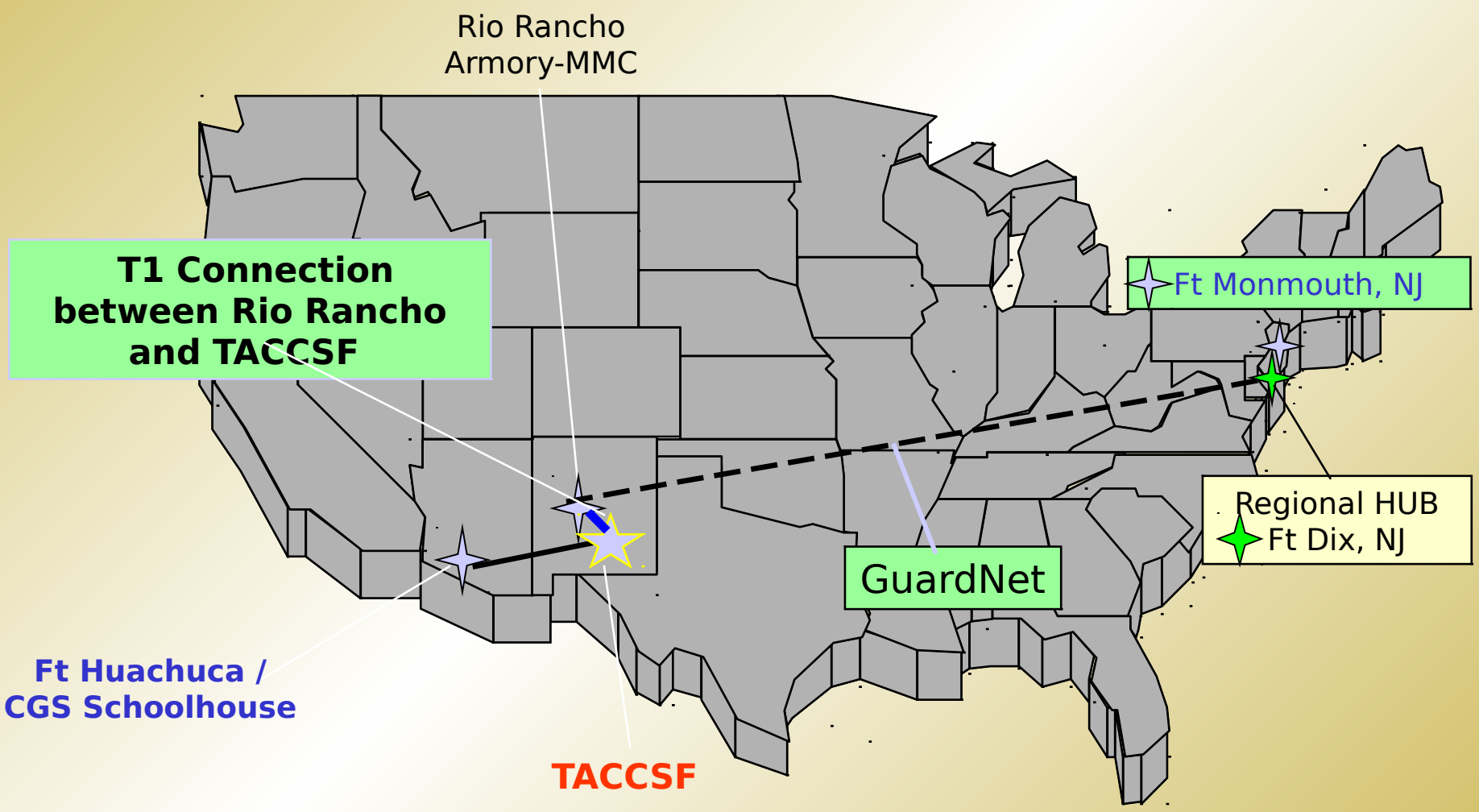
T1/ DS3 Circuit Infrastructure

DS3 CIRCUIT/ T1 LINE CO-LOCATIONS

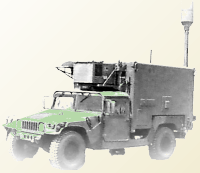


JOINT STARS TSM/PM SUPPORTING THE WARFIGHTER

DP02-1
T1 CONNECTION TO TACCSF



JD VCR
THE OUTSTATION



ANY FORT OR BASE

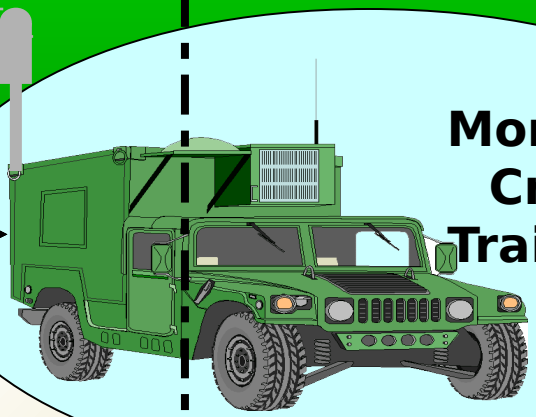
Quarterly Crew/Staff Training

UAV(MetaVR)

ASAS **AFATDS**

TACCSF
COMSEC

SAR/MTI, RSR's, COMMS, UAV



Monthly Crew Training

TGTing Process

DECIDE
DETECT
DELIVER
ASSESS

Guard NET T-1 from TACCSF

JD VCR SCHEDULE

FY02 FY03 FY04 FY05

PHASES

Prove Concept | Build Capability/Transition to Long Term Sponsor

CGS/STAFF DISTRIBUTIVE TRAINING

Quarterly Joint Crew/Staff Distributive Training

Weekly Air/Ground Crew Distributive Training

V,V&A

JD VCR DP

Prove Plug n Play

DESERT PIVOTS

May 02 | Sep 02 | Dec 02 | Apr 03 | Jul 03 | Sep 03

CAPABILITIES

BOLD=Threshold

RED=Objective

- VSTARS
- UAV
- ModIOS
- AFATDS
- GuardNET
- ASAS Multi
- CGS Tgting
- FireSIM
- EPIU
- DemoPlug n Play
- ADT SIM
- SIGINT SIDS
- AH-64D
- DCGS-A Migration

OUTSTATIONS

Ft Monmouth Test Bed

Huachuca

Warfighter?

Warfighter?

Warfighter?

Warfighter?

Add 8 Outstations

Add 8 Outstations

QUESTIONS?

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